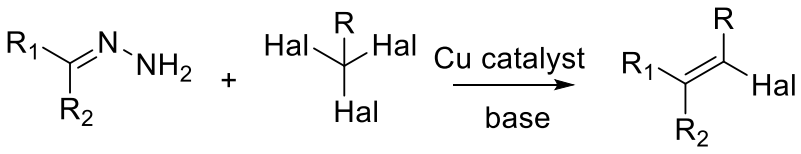
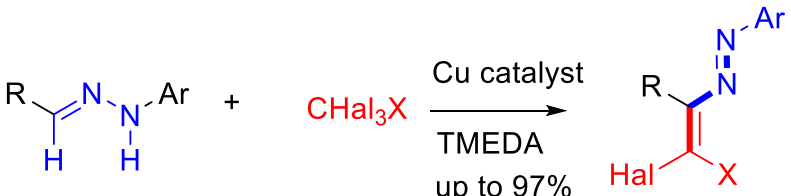
aldehydes and hydrazines. The synthetic usefulness of the obtained halogenated azadienes was demonstrated in their reactions with *O*-, *N*-, *S*- and *C*-nucleophiles, which opened access to a variety of valuable acyclic and heterocyclic products. Mechanistic studies revealed that this Cu-catalyzed transformation proceeds via radical pathway.

■ Catalytic olefination of N-unsubstituted hydrazones



■ Synthesis of diazabut-1,3-dienes from N-monosubstituted hydrazones



Hal = Cl, Br;
X = Cl, Br, CN, CO_2Et, CF_3

versatile azadiene building block

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I. V. Trushkov[1], O. A. Ivanova[2]

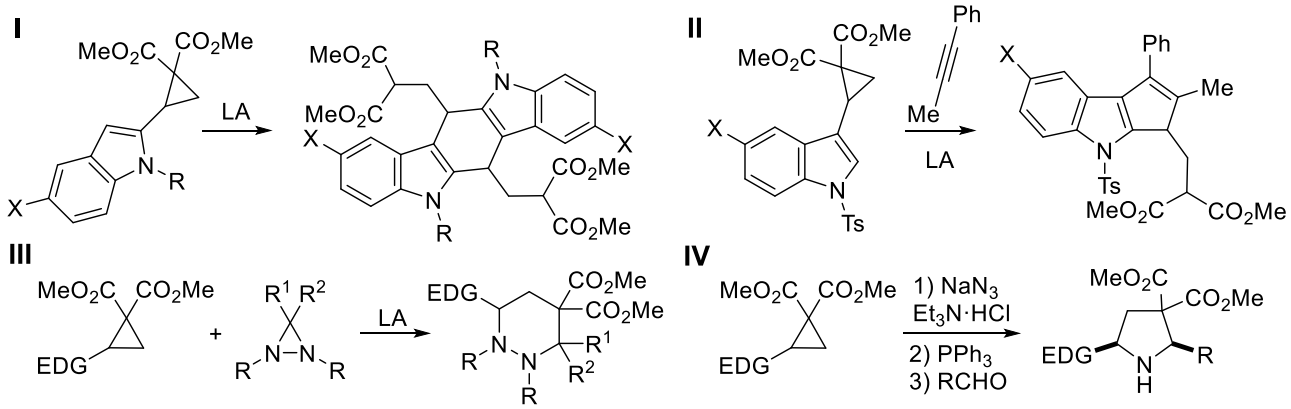
[1]N. D. Zelinsky Institute of Organic Chemistry Russian Academy of Sciences, 119991, Russia, Moscow, Leninsky Ave., 47, trush@ioc.ac.ru,
[2]Department of Chemistry, M. V. Lomonosov Moscow State University, 1199911, Russia, Moscow, Leninskie Gory, 3

DONOR-ACCEPTOR CYCLOPROPANES IN THE SYNTHESIS OF HETEROCYCLIC COMPOUNDS*

Keywords: donor-acceptor cyclopropanes, nucleophilic ring opening, cyclization, cyclodimerization, heterocycles.

Cyclopropanes bearing donor and acceptor groups at the vicinal carbon atoms (donor-acceptor {DA} cyclopropanes) are promising building blocks for the synthesis

of various heterocycles due to their excellent reactivity against diverse substrates and high selectivity of these reactions. The methods of DA cyclopropanes transformations to heterocycles can be divided on four main groups. The first one is formed by reactions wherein cyclopropanes bearing heterocycle as a donor substituent undergo cycloisomerizations, cyclodimerizations and related processes without involvement of any other educts. The second group is represented by reactions of the aforementioned cyclopropanes with some other molecules when heterocyclic donor moiety participates in the formation of a new ring furnishing a new heterocyclic scaffold. The third group is formed by reactions of DA cyclopropanes with diverse heteroatom-containing molecules affording a new heterocycle *via* cycloaddition, annulation, *etc*. The broadest scope of products can be obtained by reactions belonging to the fourth group, namely, cyclopropane ring opening with heteroatom-containing nucleophile followed by the construction of a new ring by modification of the formed acyclic compound (donor or acceptor moiety, CH-acidic fragment, an installed nucleophile) allowing for further new ring building by some cyclization, cycloaddition and other processes. A single example of every group is given in Scheme below.



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